

REMARKS

Corrected Formal Drawings

In order to conform to the informal drawing for Figure 2, as originally filed, Applicant hereby submits a first replacement sheet for a corrected formal drawing of Figure 2 that includes an embedded void (224) in a thin film (220).

In order to conform to the informal drawing for Figure 3f, as originally filed, Applicant hereby further submits a second replacement sheet for a corrected formal drawing of Figure 3f that includes a total multilayer stack thickness (256) corresponding to a multilayer stack (255).

Applicant avers that no new matter has been added in the two replacement sheets of the corrected formal drawings.

In view of the foregoing, Applicant respectfully requests the Examiner to enter the corrected formal drawings for Figure 2 and Figure 3f.

Claim Rejections 35 U.S.C. § 103 (a)

Claims 8-12 and 15-17

The Examiner has rejected claims 8-12 and 15-17 under 35 U.S.C. §103 (a) as being unpatentable over Sikonia (US 2002/0076543) in view of Laxman et al. (US 2002/0172766).

Applicant respectfully disagrees with the Examiner. Applicant has amended claim 8. Support is provided in paragraph 13 at lines 26-28 on page 5 of the specification and in paragraph 30 at lines 17-19 on page 9 of the specification.

Claim 8, as amended, of Applicant's claimed invention claims a process of

forming a multilayer stack (255) by alternately depositing and treating thin films including: obtaining a substrate (105), the substrate including devices having features with a critical dimension; depositing a first thin film (205) on the substrate with a first precursor including a first set of organic components, the first thin film having a thickness that is less than about 20.0% of the critical dimension; treating the first thin film to release the first set of organic components to leave a first set of pores (215); depositing a second thin film (305) over the first thin film with a second precursor including a second set of organic compounds, the second thin film having a thickness that is less than about 20.0% of the critical dimension; and treating the second thin film to release the second set of organic components to leave a second set of pores (315). See Figures 3a – 3f.

In contrast, the Sikonia reference cited by the Examiner teaches forming a layered stack (100) that includes forming a first layer (120) on a substrate (110); forming a second nanoporous layer (130) on the first layer; and forming an additional layer (140) on the second nanoporous layer. See Figures 1-2. Also, see paragraph 17 on page 2 of the published application.

The Laxman et al. reference cited by the Examiner teaches precursors for chemical vapor deposition of a porous, low dielectric constant, SiOC thin film. See Figure 1. Also, see paragraphs 109-111 on page 6 of the published application.

Neither of the two cited references teaches any relationship between the thickness of the thin films and the critical dimension of the features of the devices. Consequently, Applicant submits that the two references cited by the Examiner, whether individually or collectively, fail to teach, suggest, or render obvious Applicant's invention, as claimed in claim 8, as amended, to one of ordinary skill in the art of manufacturing semiconductors at the time the invention was made.

Claims 9-12 and 15-17 of Applicant's claimed invention are dependent on claim 8, as amended. Consequently, Applicant submits that the two references cited by the Examiner, whether individually or collectively, fail to teach, suggest, or render obvious Applicant's invention, as claimed in claims 9-12 and 15-17.

In view of the foregoing, Applicant respectfully requests the Examiner to withdraw the rejections to claims 8-12 and 15-17 under U.S.C. §103 (a).

Allowable Subject Matter

Claims 13-14 and 18

The Examiner has stated that claims 13-14 and 18 are objected to as being dependent upon rejected base claim 8, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant has amended base claim 8 to place it in condition for allowance. Claims 13-14 and 18 are dependent on claim 8, as amended. Consequently, Applicant respectfully requests the Examiner to withdraw the objections to claims 13-14 and 18.

Conclusion

Applicant believes that all claims pending, including amended base claim 8 and dependent claims 13-14 and 18, in Applicant's claimed invention, are now in condition for allowance so such action is earnestly solicited at the earliest possible date.